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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Allan Wesley Rosenbalm et al.
Examiner: Alicia M. Torres
Serial No.: 10/736,466 Group Art Unit 3671
Filed: 15 December 2003 (Atty. Ref. No. 16230-US)
For: CROP CONVERGING ARRANGEMENT ON MOWING
IMPLEMENT EQUIPPED WITH A ROTARY CUTTER BAR
Moline, IL 61265
13 February 2006

FILING OF SUBSTITUTE APPEAL BRIEF

Mail Stop Appeal Brief-Patents
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Alexandria, VA 22313-1450
Sir:

Responsive to the Notification of Non-Compliant Appeal Brief (37 CFR 41.37) dated 2 February 2006, applicant hereby submits a substitute appeal brief.

Any fees or charges due as a result of filing of the present paper may be charged against Deposit Account 04-0525. Two duplicates of this page are enclosed.

Respectfully,


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 Deere & Company
Signature Date 13 February 2006



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APPEAL BRIEF

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Real Party in Interest

The real party in interest is Deere & Company to whom this application was assigned by the applicants per the assignment document recorded in the United States Patent and Trademark Office on 15 December 2003 at Reel/Frame: 014831/0057.

Related Appeals and Interferences

There are no related appeals or interferences.

Status of Claims

Claims 1 - 20 are currently pending in the above-identified application.

Claims 1, 2, 4, 5, 7-9 and 14 are rejected.

Claims 15 - 20 are objected to but are considered to include allowable subject matter.

This appeal is from the rejection of claims 1, 2, 4, 5, 7-9 and 14. A copy of these claims is set forth in the attached Appendix.

Status of Amendments

All previously submitted Amendments have been entered.

Summary of Claimed Subject Matter

The present invention relates to a mowing implement that is equipped with a rotary cutter bar and utilizes right- and left-hand sets of converging drums to aid those cutting discs located outboard of opposite sides of a discharge zone to converge crop to the discharge zone. The inner two of each of the sets of converging drums are identical and have inverted bowl shaped lower end plates having conical surfaces which aid in lifting crop. The insides of the bowl-shaped converging drum end plates form voids, which together with flat horizontal ejector plates, mounted on respective cutter discs for sweeping beneath the inner two of each set of converging drums, keep crop from packing beneath these converging drums. Associated with each of the innermost ones of the inner pair of converging drums is a guide element defining a horizontal shelf located for guiding crop, elevated by the conical surfaces of the lower ends of the inner most converging drums, to the discharge passage. Crop that passes beneath the shelves is guided to locations of the discharge passage inward of respective side walls bordering the discharge passage by respective legs depending from the back sides of the shelves.

Grounds of Rejection to be Reviewed on Appeal

The Examiner has finally rejected claims 2 - 4, 7, 8, 10 and 11 under 35 USC 103(a) as being unpatentable over US Patent No. 6,581,362 to Rosenbalm et al. in view of US Patent No. 3,673,779 to Scarnato et al.

The grounds of rejection to be reviewed on appeal is whether the Scarnato reference teaches that the frusto-conical shroud 47 defines a relief area and therefore suggests a structure that is devoid of any further structure so as to allow crop to move into a relief area, and therefore when taken in combination with the Rosenbalm reference renders the claimed subject matter obvious.

More particularly, the Examiner maintains that:

Regarding claims 1, 2, 4, 5 and 7-9, Rosenbalm discloses in combination with a mowing implement including a rotary disc cutter bar (30) extending transversely to a direction of travel during mowing operation and including transversely spaced, knife-carrying rotary discs (40, 42, 44), structure (108, 110, 112) aiding in converging cut crop toward a discharge zone located behind the cutter (30), comprising: at least one converging drum (108) mounted having an upright axis of rotation located behind a line of centers of said cutter bar (30) and being located upstream relative to crop movement toward said discharge zone and adjacent at least one of said rotary discs (40), as per claim 1; and

Wherein the at least one of the rotary discs (40) is an end rotary disc, as per claim 4; and

Wherein the structure (108, 110, 112) aiding in converging cut crop further includes a second converging drum (108) mounted to a top of, and for rotation with, said end rotary disc (40), as per claim 5; and

Wherein said structure aiding in the delivery of crop includes at least a second converging drum (110), identical to said at least one converging drum (108), mounted for rotation about a second upright axis located behind and downstream from said upright axis of rotation of said at least one converging drum (108), as per claim 9.

However, Rosenbalm fails to disclose said at least one converging drum having a lower end including an outer peripheral edge located a first distance above a path followed by knife blades carried by said at least one of said rotary discs an inner region surrounding said upright axis and located a second distance, which is greater than said first distance, about said path, thereby creating a relief area beneath said at least one converging drum; and said relief area being devoid of any further structure so as to allow crop to move into said relief area, as per claim 1; and

Wherein said lower end of said at least one converging drum includes a top surface which is inclined upwardly and inwardly toward said upright axis of rotation of the converging drum, whereby crop engaging said lower end is lifted, as per claim 2; and

Wherein the lower end of the at least one converging drum is in the shape of an inverted bowl, as per claim 7; and

Wherein the surface of the at least one converging drum is conical, as per claim 8.

Scarnato discloses a similar device wherein said at least one converging drum (36) has a lower end (47) including an outer peripheral edge located a first distance above a path followed by knife blades (49) carried by said at least one of said rotary discs an inner region surrounding said upright axis and located a second distance, which is greater than said first distance, above said path, thereby creating a relief area beneath

said at least one converging drum (36); and said relief area being devoid of any further structure so as to allow crop to move into said relief area, as per claim 1; and

Wherein said lower end of said at least one converging drum (36) includes a top surface which is inclined upwardly and inwardly toward said upright axis of rotation of the converging drum (36), whereby crop engaging said lower end if lifted, as per claim 2; and

Wherein the lower end (47) of the at least one converging drum (36) is in the shape of an inverted bowl, as per claim 7; and

Wherein the surface of the at least one converging drum (36) is conical, as per claim 8.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the lower end of the converging drum of Scarnato on the device of Rosenbalm in order to shred crop material.

4. Regarding claim 14, Rosenbalm discloses in combination with a mowing implement including a rotary disc cutter bar (30) extending transversely to a direction of travel during owing operation and including transversely spaced, knife-carrying rotary discs (40, 42, 44), structure (108, 110, 112) aiding in converging cut crop toward a discharge zone located behind the cutter (30), comprising: at least one converging drum (108) mounted having an upright axis of rotation located behind a line of centers of said cutter bar (30) and being located upstream relative to crop movement toward said discharge zone and adjacent at least one of said rotary discs (40, 42, 44) so that knives carried by the at least one of the rotary discs (108, 110, 112) sweeps a path beneath said at least one converging drum (108), as per claim 14.

However, Rosenbalm fails to disclose wherein the at least one converging drum having a lower end including an upper surface inclined upwardly toward the upright axis and including a lower surface having, relative to the axis of rotation, a central region located above the path by a distance greater than a peripheral region, thereby creating a relief area beneath the at least one converging drum; and said relief area being devoid of any further structure so as to allow crop to move into said relief area.

Scarnato discloses a similar device wherein the at least one converging drum (36) has a lower end (47) including an upper surface inclined upwardly toward the upright axis and including a lower surface having, relative to the axis of rotation, a central region located above the path by a distance greater than a peripheral region, thereby creating a relief area beneath the at least one converging drum (36); and said relief area being devoid of any further structure so as to allow crop to move into said relief area.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the lower end of the converging drum of Scarnato on the device of Rosenbalm in order to shred crop material. (Final Action of 16 May 2005 pages 2-5)

Argument

Claims 2 - 4, 7, 8, 10 and 11 are under a rejection based on 35 USC 103(a) as being unpatentable over Rosenbalm et al. in view of Scarnato et al. This rejection is thought to be in error for the reasons stated below.

Specifically, among other structure, claims 1 and 14 each require at least one converging drum to have a lower end including an outer peripheral edge located at a first distance above a path followed by knife blades carried by the at least one rotary disc and to include an inner region surrounding the axis of rotation of the converging drum and located a second distance, which is greater than said first distance, above said path, thereby creating a relief area beneath said at least one converging drum and with said relief area being devoid of any structure thereby permitting crop to move into the relief area, with it being noted that the knife blades of the at least one rotary disc passes vertically beneath the outer peripheral edge of the lower end of the converging drum.

As the Examiner has recognized, the converging drums 110 and 112 of Rosenbalm et al. do not have lower ends which define the required relief area into which crop may move.

The Examiner asserts that the frusto-conical shroud 47 of Scarnato et al. defines a relief area into which crop can move. However the spherical cap 50 which is mounted to the bottom of the drum 36 substantially covers the area beneath the shroud 47 and prevents crop from moving into the space defined by the shroud 47. Thus, Scarnato et al. does not teach a relief area that is devoid of structure so as to allow crop to move into the relief area. The cap 50 of Scarnato et al. covers any relief area that would otherwise be created by the shroud 47 and thus there is no relief area above the blades into which crop can move. The Examiner further

asserts that the bottom of the conveying drum of Scarnato is not structure that would restrict material from moving into the relief area. It is respectfully submitted that if the shroud 47 of Scarnato is argued to define the outer peripheral edge located a first distance vertically above a path followed by knife blades carried by said at least one of said rotary discs and including an inner region surrounding said upright axis and located a second distance, which is greater than said first distance, above said path, thereby creating a relief area beneath said at least one converging drum, as claimed, then the cap 50 necessarily blocks crop from moving into this area. Thus the structure of Scarnato is not devoid of any further structure so as to allow crop to move into said relief area. Scarnato et al. simply does not have the claimed relief area into which crop can move. Accordingly, even if the Scarnato and Rosenbalm references are combined, the claimed invention is not obvious.

Claims 2, 4, 5, and 7-9 depend either directly or indirectly from claim 1 and are likewise thought allowable.

In view of the above, Claims 3, 6, 10-13 and 15-20 are each dependent from respective claims thought allowable, and hence are thought also to be in condition for allowance.

For the reasons stated above, appellants respectfully request that the Examiner's rejections of the claims be reversed.

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Respectfully,




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Signature

Deere & Company

Date

Claims Appendix

Listing of Claims:

1. (Previously Amended) In combination with a mowing implement including a rotary disc cutter bar extending transversely to a direction of travel during mowing operation and including transversely spaced, knife-carrying rotary discs, structure aiding in converging cut crop toward a discharge zone located behind the cutter, comprising: at least one converging drum having an upright axis of rotation located behind a line of centers of said cutter bar and being located upstream relative to crop movement toward said discharge zone and adjacent at least one of said rotary discs; and said at least one converging drum having a lower end including an outer peripheral edge located a first distance vertically above a path followed by knife blades carried by said at least one of said rotary discs and including an inner region surrounding said upright axis and located a second distance, which is greater than said first distance, above said path, thereby creating a relief area beneath said at least one converging drum; and said relief area being devoid of any further structure so as to allow crop to move into said relief area.
2. (Original) The combination, as defined in claim 1, wherein said lower end of said at least one converging drum includes a top surface which is inclined upwardly and inwardly toward said upright axis of rotation of the converging drum, whereby crop engaging said lower end is lifted.
3. (Previously Amended) The combination, as defined in claim 1, wherein said structure aiding in converging cut crop includes a flat ejector plate mounted to a top of, and for rotation with, said at least one rotary disc; and said flat ejector plate being dimensioned and located relative to said lower end of said at least one converging drum so as to sweep a path beneath said at least one converging drum.
4. (Original) The combination, as defined in claim 1, wherein said at least one of said rotary discs is an end rotary disc.
5. (Original) The combination, as defined in claim 4, wherein said structure

aiding in converging cut crop further includes a second converging drum mounted to a top of, and for rotation with, said end rotary disc.

6. (Previously Amended) The combination, as defined in claim 3, wherein said at least one converging drum is located adjacent to a second rotary disc; and a second flat ejector plate being mounted to a top of, and for rotation with said second rotary disc; and said second flat ejector plate being dimensioned and located relative to said lower end of said at least one converging drum for sweeping a path beneath said at least one converging drum.

7. (Original) The combination, as defined in claim 1, wherein said lower end of said at least one converging drum is in the shape of an inverted bowl.

8. (Original) The combination, as defined in claim 2, wherein said surface of said at least one converging drum is conical.

9. (Original) The combination, as defined in claim 1, wherein said structure aiding in the delivery of crop includes at least a second converging drum, identical to said at least one converging drum, mounted for rotation about a second upright axis located behind and downstream from said upright axis of rotation of said at least one converging drum.

10. (Original) The combination, as defined in claim 1, wherein said structure aiding in the delivery of crop includes a guide element defining a horizontal shelf located adjacent said at least one converging drum for receiving crop delivered by said at least one converging drum; and said shelf extending downstream from said at least one converging drum.

11. (Original) The combination, as defined in claim 10, wherein said mowing implement includes a conditioner arrangement located just rearward of said discharge zone; and said guide element further including a leg joined to, and extending down and inwardly from, a back of, said shelf to a location in front of said conditioner arrangement.

12. (Original) The combination, as defined in claim 11, wherein said leg of said guide element has an inner edge which slopes outwardly to the rear so as to induce crop material to hairpin on said edge in a location where it is stripped off by said conditioner arrangement.

13. (Original) The combination, as defined in claim 10, wherein said guide element further includes a stripper plate located directly above said shelf and having an edge located adjacent a path swept by said at least one converging drum.

14. (Previously Amended) In combination with a mowing implement including a rotary disc cutter bar extending transversely to a direction of travel during mowing operation and including transversely spaced, knife-carrying rotary discs, structure aiding in converging cut crop toward a discharge zone located behind the cutter, comprising: at least one converging drum mounted having an upright axis of rotation located behind a line of centers of said cutter bar and being located upstream relative to crop movement toward said discharge zone and adjacent at least one of said rotary discs so that knives carried by said at least one of said rotary discs sweeps a path beneath said at least one converging drum; and said at least one converging drum having a lower end including an upper surface inclined upwardly toward said upright axis and including a lower surface having, relative to said axis of rotation, a central region located above said path by a distance greater than a peripheral region, thereby creating a relief area beneath said at least one converging drum; and said relief area being devoid of any further structure so as to permit crop to move into said relief area.

15. (Previously Amended) The combination, as defined in claim 14, wherein said structure aiding in converging cut crop includes a flat ejector plate mounted to a top of, and for rotation with, said at least one rotary disc; and said flat ejector plate being dimensioned and located relative to said at least one converging drum so as to sweep a path beneath said at least one converging drum.

16. (Previously Amended) The combination, as defined in claim 15, wherein said at least one converging drum is located adjacent to a second rotary disc; and a second flat ejector plate being mounted to a top of, and for rotation with said second

rotary disc; and said second flat ejector plate being dimensioned and located relative to said at least one converging drum for sweeping a path beneath said at least one converging drum.

17. (Original) The combination, as defined in claim 14, wherein said structure aiding in the delivery of crop includes a guide element defining a horizontal shelf located adjacent said upper surface of said lower end of, and extending downstream from, said at least one converging drum for guiding crop elevated by said upper surface of said at least one converging drum.

18. (Original) The combination, as defined in claim 17, wherein said guide element further includes a stripper plate located directly above said shelf and having an edge located adjacent a path swept by said at least one converging drum.

19. (Original) The combination, as defined in claim 17, wherein said mowing implement includes a conditioner arrangement located just rearward of said discharge zone; and said guide element further including a leg joined to, and extending down and inwardly from, a back of, said shelf to a location in front of said conditioner arrangement.

20. (Original) The combination, as defined in claim 19, wherein said leg of said guide element has an inner edge which slopes outwardly to the rear so as to induce crop material to hairpin on said edge in a location where it is stripped off by said conditioner arrangement.

Evidence Appendix

None

Related Proceedings Appendix

None